

What is claimed is:

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1. A wireless communication device that magnetically attaches to an article, comprising:

5 a control system;

a wireless communication electronics; and

a magnet;

whereby said magnet has a magnetic force that attaches said magnet to the magnetic surface portion of the article when in close proximity to the magnetic surface portion of the article.

2. The device of claim 1, wherein said magnet is an electro-magnet.

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3. The device of claim 2, wherein said electro-magnet is comprised of a coil around a magnetic surface portion and said control system provides a voltage across said coil.

4. The device of claim 3, wherein said voltage is generated by a reservoir capacitor.

5. The device of claim 3, wherein said voltage is generated by a battery.

6. The device of claim 1, wherein said magnet is located inside a chamber.

5 Sub B1 7. The device of claim 6, wherein said magnet moves in said chamber in a plane substantially perpendicular to the magnetic surface portion.

8. The device of claim 6, wherein said chamber is comprised of two pole pieces forming a gap at two opposite ends.

10 Sub D1 9. The device of claim 8, wherein said wireless communication device is located in one of said pole pieces.

15 10. The device of claim 9, wherein said wireless communication device is located near said gap.

11. The device of claim 9, wherein said wireless communication device is located away from said gap.

20 12. The device of claim 10, further comprising a second wireless communication device located in one of said pole pieces away from said gap.

13. The device of claim 6, wherein said chamber has an open portion for an external device to be inserted inside said chamber proximate to said magnet.

14. The device of claim 6, further comprising a latch that rotates said magnet in said chamber in response to particular signal field.

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Sub. A1 15. The device of claim 14, further comprising a spring coupled to said latch to release said latch when said spring resonates.

16. The device of claim 14, wherein said particular signal field is 60 Hertz.

10 17. The device of claim 14, further comprising a signal detector coupled to said latch to detect the particular signal field and release said latch in response thereto.

15 18. The device of claim 14, wherein said control system provides power to a piezoelectric device to release said latch.

19 The device of claim 1, wherein said control system alters said magnetic force when said control system receives a message through said wireless communication electronics.

20 20. The device of claim 19 wherein said control system passes a current to an electromagnet to alter said magnetic force.

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21. The device of claim 20, wherein said electromagnet is mounted in close proximity to said magnet.

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22. The device of claim 19, wherein said control system activates a latch
that rotates said magnet to alter said magnetic force.

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23 The device of claim 1, wherein said wireless communication device contains a non-magnetic force in addition to said magnetic force to aid the attaching of said wireless communication device to the magnetic surface portion.

Figure 1 consists of 11 subplots, labeled (a) through (k), arranged vertically. Each subplot shows a different physical quantity as a function of time t (ranging from 0 to 10). The subplots are: (a) Energy $E(t)$, (b) Momentum $P(t)$, (c) Entropy $S(t)$, (d) Entropy $S(t)$, (e) Entropy $S(t)$, (f) Entropy $S(t)$, (g) Entropy $S(t)$, (h) Entropy $S(t)$, (i) Entropy $S(t)$, (j) Entropy $S(t)$, and (k) Entropy $S(t)$. The y-axis for all plots ranges from 0 to 1.0. The plots show various behaviors: (a) is a straight line from (0,0) to (10,1.0); (b) is a straight line from (0,0) to (10,1.0); (c) is a straight line from (0,0) to (10,1.0); (d) is a straight line from (0,0) to (10,1.0); (e) is a straight line from (0,0) to (10,1.0); (f) is a straight line from (0,0) to (10,1.0); (g) is a straight line from (0,0) to (10,1.0); (h) is a straight line from (0,0) to (10,1.0); (i) is a straight line from (0,0) to (10,1.0); (j) is a straight line from (0,0) to (10,1.0); and (k) is a straight line from (0,0) to (10,1.0).

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24. The device of claim 1, wherein said magnet is at least one tab connected to said wireless communication electronics.

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25. The device of claim 24, wherein said at least one tab is a permanent magnet.

26. The device of claim 24, wherein said at least one tab is an electromagnet.

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27. ~~The device of claim 1, wherein said magnetic surface portion is a~~
~~conductive material.~~

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28. A system for identification of an article, comprising:

an article containing having a magnetic surface portion;

a wireless communication device, further comprising:

a control system;

a wireless communication electronics; and

5 a magnet;

whereby said magnet uses magnetic force to attach said wireless communications device to said magnetic surface portion of said article when in close proximity to said magnetic surface portion.

10 29. The system of claim 28, wherein said magnet is an electromagnet.

30 The system of claim 28, wherein said electromagnet is comprised of a
sub. a7 coil around a magnetic surface portion and said control system provides a voltage
across said coil.

15 31. The system of claim 30, wherein said voltage is generated by a reservoir capacitor.

20 32. The system of claim 30, wherein said voltage is generated by a battery.

33. The system of claim 28, wherein said magnet is located inside a chamber.

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34. The system of claim 33, wherein said magnet moves in said chamber in a plane substantially perpendicular to the magnetic surface portion.

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35. The system of claim 33, wherein said chamber is comprised of two pole pieces forming a gap at two opposite ends.

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36. The system of claim 35, wherein said wireless communication device is located in one of said pole pieces.

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37. The system of claim 36, wherein said wireless communication device is located near said gap.

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38. The system of claim 36, wherein said wireless communication device is located away from said gap.

39. The system of claim 37, further comprising a second wireless communication device located in one of said pole pieces away from said gap.

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40. The system of claim 33, wherein said chamber has an open portion for an external device to be inserted inside said chamber proximate to said magnet.

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41. The system of claim 40, wherein said external device is a magnetic

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42. The system of claim 28, further comprising an external device that is brought into proximity to said magnet to alter said magnetic force.

43. The system of claim 42, wherein said external device is a magnet.

44. The system of claim 42, wherein said external device is a signal field generator.

45. The system of claim 42, wherein altering of said magnetic force is achieved by substantially canceling said magnetic force.

46. The system of claim 42, wherein altering of said magnetic force is achieved by moving said magnet with respect to said magnetic surface portion.

47. The system of claim 28, wherein said magnet is housed and rotates in a magnetic assembly.

48. The system of claim 47, further comprising a latch that rotates said magnet in response to particular signal field.

sub. 91 49. The system of claim 48, further comprising a spring coupled to said latch to release said latch when said spring resonates.

50. The system of claim 48, wherein said particular signal field is 60 Hertz.

5 51. The system of claim 48, wherein said control system provides power to an piezoelectric device to release said latch.

sub. 91 52. The system of claim 48, further comprising a signal detector coupled to said latch to detect the particular signal field and release said latch in response thereto.

sub. 91 53. The system of claim 28, wherein said control system alters said magnetic force when said control system receives a message through said wireless communication electronics.

54. The system of claim 53, wherein said control system passes a current to an electromagnet to alter said magnetic force.

20 sub. 91 55. The system of claim 54, wherein said electromagnet is mounted in close proximity to said magnet.

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56. The system of claim 53, wherein said control system activates a latch that rotates said magnet to alter said magnetic force.

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57. The system of claim 28, wherein said wireless communication device contains a non-magnetic force in addition to said magnetic force to aid the attaching of said wireless communication device to the magnetic surface portion.

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58. The system of claim 28, wherein said magnet is at least one tab connected to said wireless communication electronics.

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59. The system of claim 28, wherein said at least one tab is a permanent magnet.

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60. The system of claim 28, wherein said at least one tab is an electromagnet.

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61. The system of claim 28, wherein said magnetic surface portion is a conductive material.

62. A method of detaching a wireless communication device from a magnetic surface portion, wherein the wireless communication device contains a magnet that attaches the wireless communication device to the magnetic surface portion by a magnetic force, comprised of altering said magnetic force.

63. The method of claim 62, wherein altering said magnetic force is comprised of rotating said magnet.

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64. The method of claim 63, wherein rotating said magnet is comprised of the step of activating a latch coupled to said magnet.

65. The method of claim 62, wherein activating a latch is comprised of bringing said wireless communication device in proximity to a signal field generator.

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66. The method of claim 65, wherein bringing said wireless communication device in proximity to a signal field generator step resonates a spring coupled to said latch.

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67. The method of claim 62, wherein altering said magnetic force is comprised of bringing said wireless communication device in proximity to a signal field generator.

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68. The method of claim 62, wherein altering said magnetic force is comprised of bringing said wireless communication device in proximity to an external magnet to move said magnet away from the magnetic surface portion.

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